SONY

3-750-455-22 (1)

Compact Disc Player

Operating Instructions

COMPACT disc DIGITAL AUDIO

CDP-C900

© 1989 by Sony Corporation

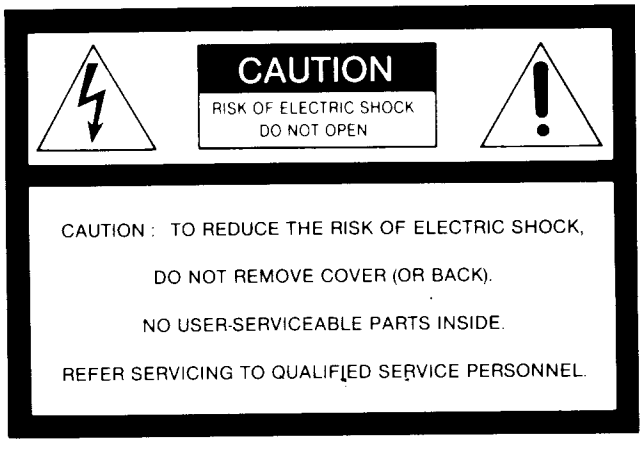
Owner's Record

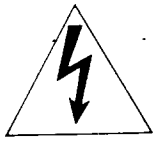
The model and serial numbers are located at the rear. Record the serial number in the space provided below. Refer to these numbers whenever you call upon your Sony dealer regarding this product.

Model No. CDP-C900 Serial No. _____

WARNING

To prevent fire or shock hazard, do not expose the unit to rain or moisture.


CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN
CAUTION : TO REDUCE THE RISK OF ELECTRIC SHOCK,
DO NOT REMOVE COVER (OR BACK).
NO USER-SERVICEABLE PARTS INSIDE.
REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



This symbol is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

This symbol is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

INFORMATION

This equipment generates and uses radio frequency energy and if not installed and used properly, that is, in strict accordance with the manufacturer's instructions, may cause interference to radio and television reception. It has been type tested and found to comply with the limits for a Class B computing device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

Reorient the receiving antenna
Relocate the equipment with respect to the receiver
Move the equipment away from the receiver
Plug the equipment into a different outlet so that equipment and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio/television technician for additional suggestions. The user may find the following booklet prepared by the Federal Communications Commission helpful:

"How to Identify and Resolve Radio-TV Interference Problems". This booklet is available from the U.S. Government Printing Office, Washington, DC 20402, Stock No. 004-000-00345-4.

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Features

The compact disc player is equipped with an automatic disc changer which allows you to play up to 10 discs in a row. You can choose from a large number and wide variety of selections.

A variety of playing modes:

- **Program play** allows you to play up to 32 selections or the whole disc, in any desired order (page 14).
- **Shuffle play** for playing selections in random order (page 16).
- **Repeat play** for repeating individual discs, all the discs in a magazine, program and shuffle play (page 18).

Fading in/Fading out

You can begin a selection fading in and end it fading out (page 13).

High quality playback sound with:

- 8-times oversampling 18-bit digital filter
- Dual D/A converter system

The optical digital output

Allows direct connection to a D/A converter or to a digital amplifier having an optical digital input connector.

The easy-to-use disc magazine

Allows you to play a particular set of discs at any time simply by inserting the disc magazine into the CD player. Additional magazines (optional) allow you to create a wide variety of sets.

Precautions

On Safety

- Operate the unit only on 120 V AC, 60 Hz.
- Should any solid object or liquid fall into the cabinet, unplug the unit and have it checked by qualified personnel before operating it again.
- Unplug the unit from the wall outlet if it will not be used for a long time. To disconnect the cord, pull it out by grasping the plug. Never pull the cord itself.
- As the laser beam used in this compact disc player is harmful to the eyes, do not attempt to disassemble the cabinet. Refer servicing to qualified personnel only.

On operation

When the unit is not used, turn the power off, to conserve energy and to extend the useful life of your unit.

Important

Since the CD system boasts a wide dynamic range, the peaks of high level inputs are recorded with high fidelity, and the noise level is very low.
Do not turn up the volume while listening to a portion with no audio signals or very low level inputs. If you do, the speakers may be damaged when a peak level portion is played.

For detailed safety precautions, see the leaflet "IMPORTANT SAFEGUARDS".

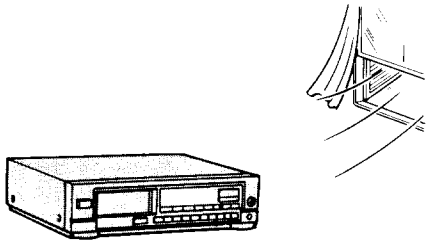
If you have any questions or problems concerning your unit, please contact your nearest Sony dealer.

Installation

Notes on Installation

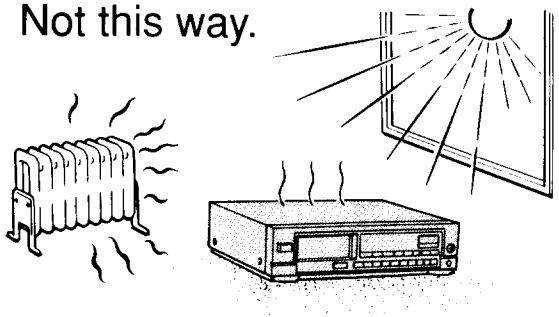
Place the unit in a location with adequate air circulation to prevent internal heat build-up in the unit.

This way.



Do not place the unit on a soft surface, such as a rug that would block the ventilation holes on the bottom.

Not this way.

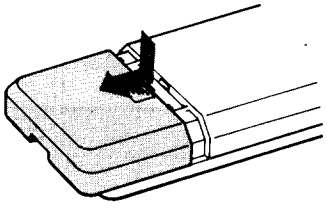


- Do not install the unit:
  — near heat sources such as radiators or air ducts.
  — in a place subject to direct sunlight, excessive dust, mechanical vibration or shock.
- Do not move the unit while the disc magazine is inside, otherwise the discs may fall out of the magazine and you will be unable to remove them.

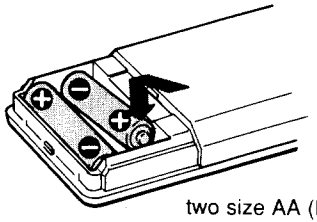
Installing Batteries

Install the batteries in the supplied remote commander for remote control operation.

1



2



two size AA (R6) batteries

On moisture condensation

If the player is brought directly from a cold to a warm location, or is placed in a very damp room, moisture may condense on the lens inside the unit.
Should this occur, the player will not operate. In this case, remove the disc and leave the player turned on for about an hour until the moisture evaporates.

Do not throw away the carton and the packing material

It will be an ideal container in which to transport.

To avoid damage caused by battery leakage and corrosion

When the commander will not be used for a long time, remove the batteries.

On battery life

About half a year of normal operation can be expected when using Sony SUM-3 (NS) batteries.
When the batteries are low, the remote commander will not operate the unit. In this case, replace both batteries with new ones.

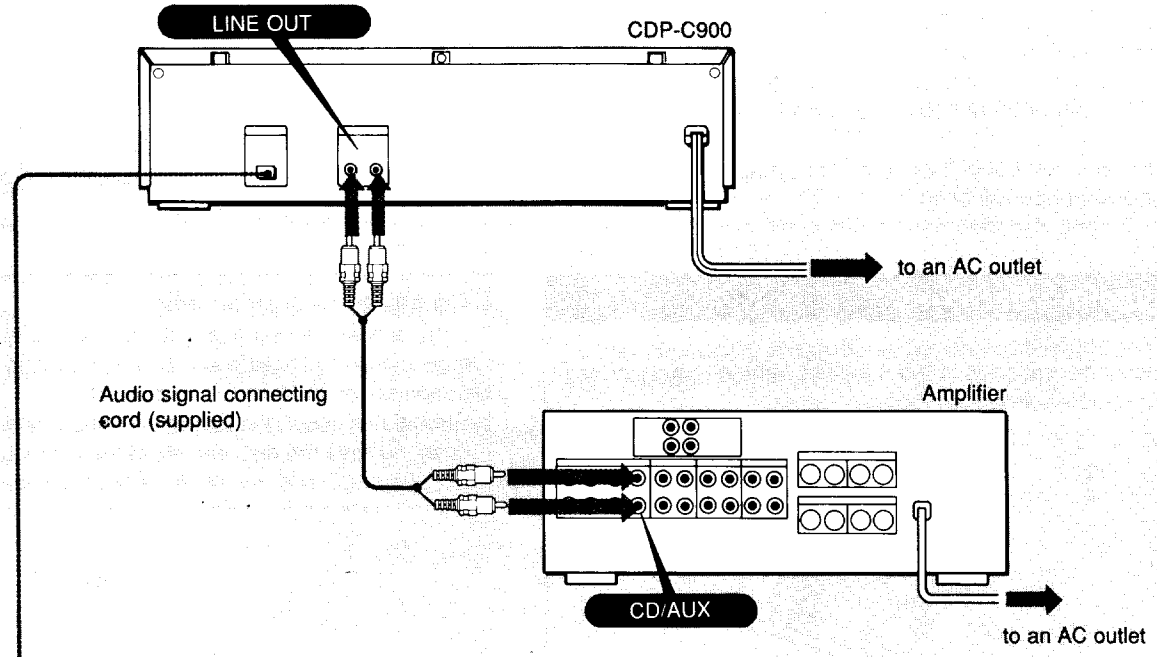
Connection

Notes on Connection

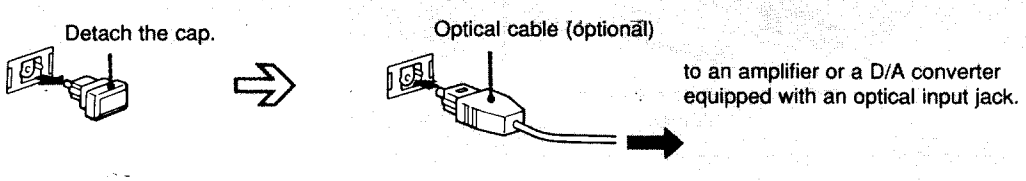
- Turn off the amplifier before making connections.
- Be sure to insert the plugs firmly into the jacks. Loose connections may cause hum and noise.
- Leave a little slack in the connecting cord to allow for inadvertent shock or vibration.
- Connect the red plug of the supplied connecting cord to the right-channel jack (R) of the amplifier and the white plug to the left-channel jack (L). Otherwise, the right and left channels will be reversed.

Connection Diagram

Connecting the amplifier directly



Using the DIGITAL OUT jack

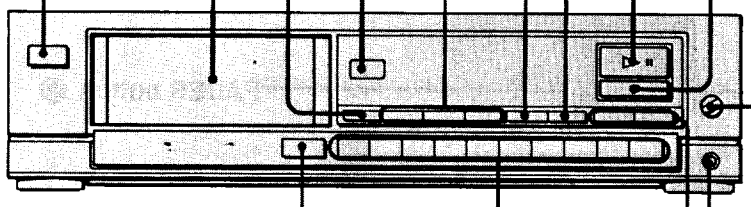


Note on the DIGITAL OUT jack
Connect the DIGITAL OUT jack to the amplifier or D/A converter with the optical digital input only. When you connect, use the optional optical cable POC-15. When only the optical out is connected, you cannot use fade out and in function.

Parts Identification

Front Panel

Refer to the pages indicated in ● for details.



Remote control sensor

TIME button ⓫

Magazine slot

POWER swich ⓫

⏏ (eject) button ⓫

DISC selectors ⓬

PLAY MODE buttons
PROGRAM button ⓮
SHUFFLE button ⓰
CONTINUE button ⓭ ⓮ ⓰

REPEAT button ⓲

FADER button ⓭

▶ II (play/pause) button ⓫

■ (stop) button ⓫

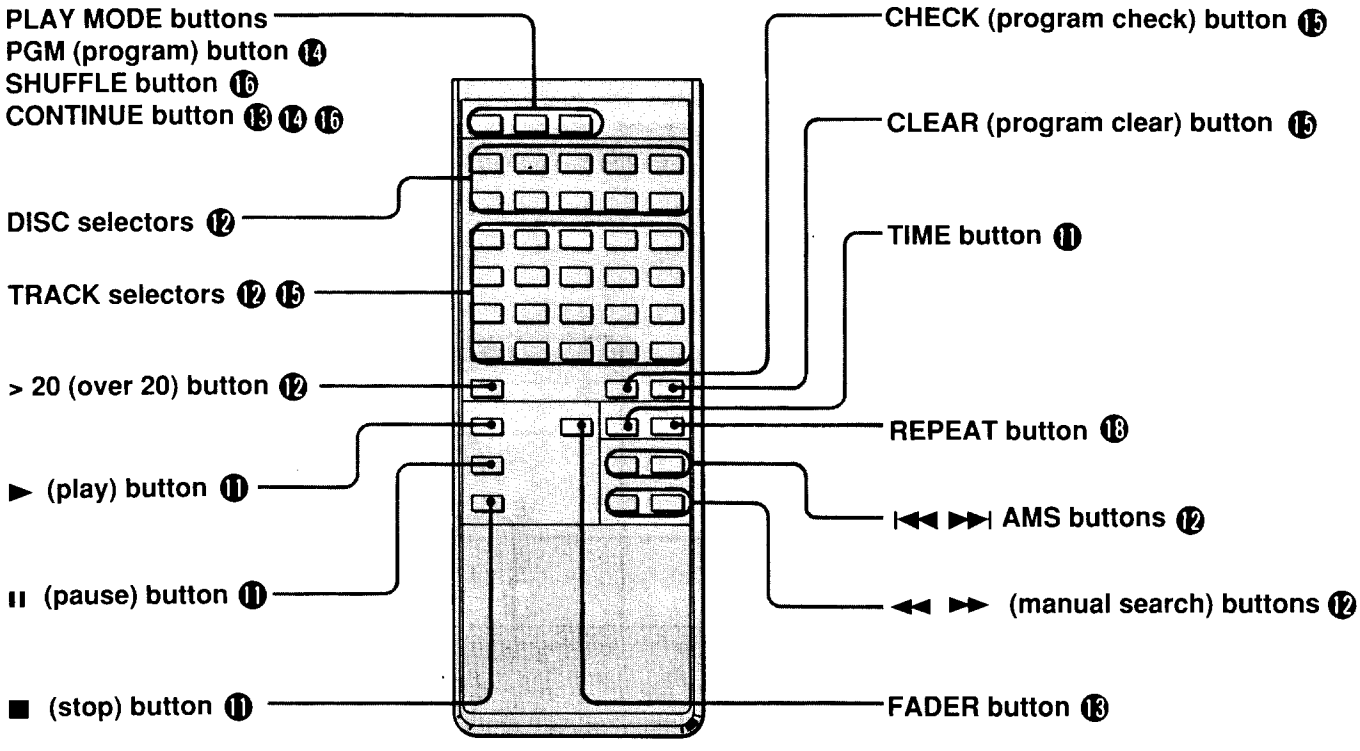
PHONE LEVEL
(headphone level) control
Adjust the headphone volume.

HEADPHONES jack

I◀◀ ▶▶I AMS*/RMS buttons ⓬**

* AMS is an abbreviation of Automatic Music Sensor.
** RMS is an abbreviation of Random Music Sensor.

Remote Commander


PLAY MODE buttons
PGM (program) button ⑭
SHUFFLE button ⑯
CONTINUE button ⑬ ⑭ ⑯
DISC selectors ⑫
TRACK selectors ⑫ ⑮
> 20 (over 20) button ⑫
► (play) button ⑪
II (pause) button ⑪
■ (stop) button ⑪
CHECK (program check) button ⑮
CLEAR (program clear) button ⑮
TIME button ⑪
REPEAT button ⑬
I◄◄ ►►I AMS buttons ⑫
◄◄ ►► (manual search) buttons ⑫
FADER button ⑬

Remote Control Operation

Once the POWER is turned on, you can control the various functions of the player from a distance using the supplied remote commander.

Operations which cannot be performed with the remote commander include:

- Turning the power on and off.
- Ejecting the disc magazine.

The following operations can only be performed with the remote commander:

- Locating a selection by track number
- Manual search
- Checking the programmed selections
- Clearing the last selection or a specific selection in the program

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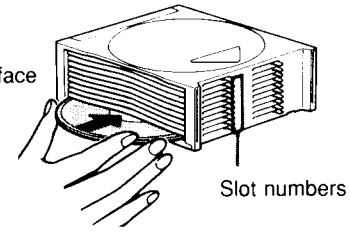
Notes on the remote commander and remote control operation

- Keep the commander away from extremely hot or humid places.
- Avoid dropping any foreign objects into the commander casing, particularly when replacing the batteries.
- To avoid a malfunction, do not simultaneously depress two or more buttons.
- Avoid exposure of the remote control sensor to direct sunlight or any strong artificial light.

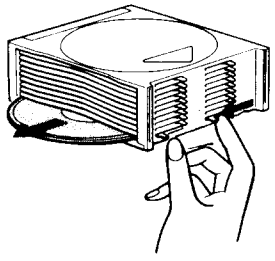
Playing Discs

Inserting Discs into the Disc Magazine (up to 10 discs, one in each slot)



Push in until the disc is fully inserted.

To remove the disc



Slide the blue lever of the storage shelf in the direction of the arrow.

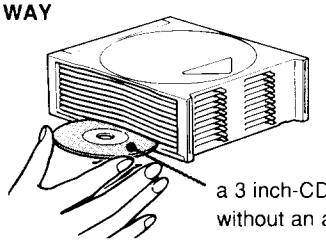
Notes

- Do not insert more than one disc into a slot.
- Each slot number corresponds to a disc number that is selected by the DISC selector. If you select the empty slot using the DISC selector, the circle and the selected disc number in the display will disappear.

Note on 3-inch CDs

3-inch CDs can be played in this unit.provided that either a Sony CSA-8 adaptor, one that complies with CD standard specifications, or one that has mark is used. Without an adaptor, or if an adaptor not recommended above is used, the unit and disc may be damaged.

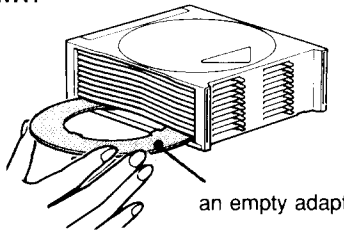
NOT THIS WAY



a 3 inch-CD without an adaptor

Do not insert an empty adaptor as it will become lodged in the unit and cannot be removed without special equipment.

NOT THIS WAY



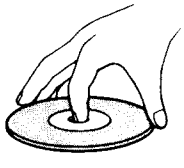
an empty adaptor

Notes on discs

Handle the disc by its edge, and to keep the disc clean, do not touch the surface.

Do not stick paper or tape.

Do not expose the disc to direct sunlight or heat sources such as hot air ducts, or leave it in a car parked in direct sunlight where there can be a considerable rise in the temperature.

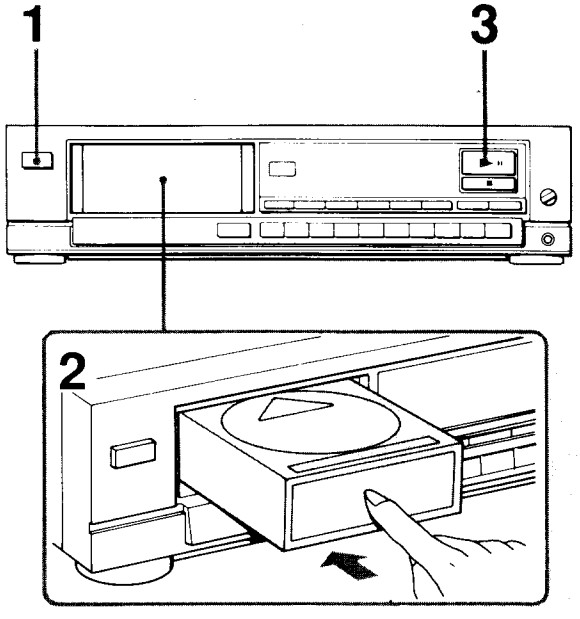


This way

Not this way

Starting Play

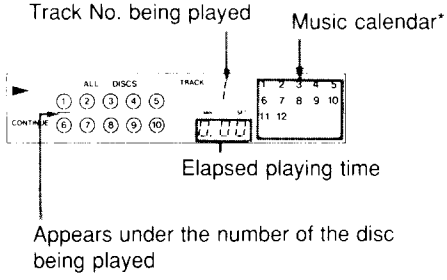
Before playing a disc, turn on the amplifier and set the input selector to the CD player position.



1 **Depress POWER.**

2 **Insert the disc magazine firmly** into the magazine slot.

3 **Press ►II (or ► on the remote commander).**
Play will begin from the beginning of the disc No. 1.



* In Music Calendar, the track numbers of selections on a disc are displayed (up to 20).

Stopping play

To stop for a moment during play	Press ►II (or II on the remote commander). To start play again, press ►II (or II) again.
To stop play	Press ■.
To stop play and remove the disc magazine	Press ⏏.

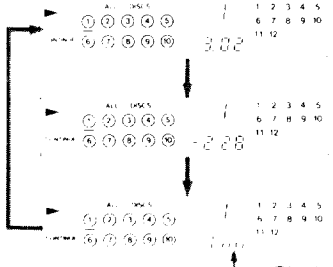
To start ALL DISCS CONTINUE play

When the power is turned on, the player is always set to the ALL DISCS CONTINUE play mode. During use, if "1 DISC", "PROGRAM" or "SHUFFLE" is displayed, press CONTINUE until "ALL DISCS" and "CONTINUE" appear.

To pause play instead of starting play
Press ►II twice, or press II on the remote commander. The player enters the pause mode at the beginning of the disc No. 1. To start play, press ►II (or II) again.

Indications
"– – – – –" indication appears on the display window instead of the numbers, if a track number higher than 20 is selected.
This also happens when TIME is pressed to check the remaining time of the 21st or succeeding selection.

To change the display during play or pause
Each time the TIME button is pressed, the display changes as follows:



Selecting a Particular Disc

Press one of the DISC selectors (1 to 10) to select the disc you want.
Play will begin from the first selection on that disc.

Locating a Particular Selection

Locating a selection by track number

This operation is possible only with the remote commander.
Press the TRACK selector (1 to 20) which corresponds to the selection you want to play. (To choose a number greater than 20, see the note below.)
Play will begin from the beginning of the selection.

Locating a selection in sequence (Automatic Music Sensor)

You can locate the beginning of a desired selection during play.

To locate the beginning of the selection being played	Press ⏮ once.
To locate the beginning of the next selection	Press ⏭ once.

Continue to press either button to continue to move forward or backwards through the selection list without stopping.
You cannot, however, skip to the next disc.

While in stop mode, it is also possible to move forward or backwards through the selection list by using ⏮ or ⏭.

Locating a Particular Point in a Selection

Locating a point within a selection (Manual Search)

You can locate a particular point in a selection during play by monitoring the high-speed sound. This operation is possible only with the remote commander.

To go back at high speed	Keep ◀◀ pressed.
To go ahead at high speed	Keep ▶▶ pressed.

Release the button at the desired point.

To locate at high speed

Press ◀◀ or ▶▶ in the pause mode. The search speed will increase by three times, but there will be no sound. Find the desired point you want to stop by observing the display.

If you continue to press ◀◀ / ▶▶

If you continue to press ▶▶ once the end of the disc has been reached. "¬ ¬" will appear in the window. Press ◀◀ or ⏮ to return to the normal display.
If you continue to press ◀◀ at the beginning of a disc, play will automatically begin at the first selection.

To choose a selection whose number is greater than 20
This operation is possible only with the remote commander.
Use the >20 button and the 1 to 10 buttons.

Ex. to play track No.32
1 Press >20.
2 Press 3, then 2.

Ex. To play track No.30.
1 Press >20.
2 Press 3, then 10.

To display the total number of selections and time on a disc
Select the disc with the DISC selector.
Press ■ while the cursor (_) blinks under the selected disc number.
(It blinks while the disc is being pulled out from the magazine.)
The total number of selections and the total amount of playing time will be displayed for a few seconds after the disc is pulled out. To display this again, press TIME twice in the stop mode.

Playing One Disc at a Time—1 DISC Play

If you want to play only one disc in the disc magazine, **press CONTINUE.**
"1 DISC" will appear in the display window and play will stop after all the selections on the current disc have been played.

To listen to another disc

Press the DISC selector which corresponds to the disc you want.

To return to normal play

Press CONTINUE again.
"ALL DISCS" will appear in the display window.

Fading in/Fading out

You can have the play fade in and fade out for 5 seconds.

To end the play fading out

Press FADER when you want to start fading out.
II blinks in the window, and play fades out for 5 seconds and enters the pause mode.

To restart the play fading in

Press FADER.
► blinks in the window, and play fades in for 5 seconds.

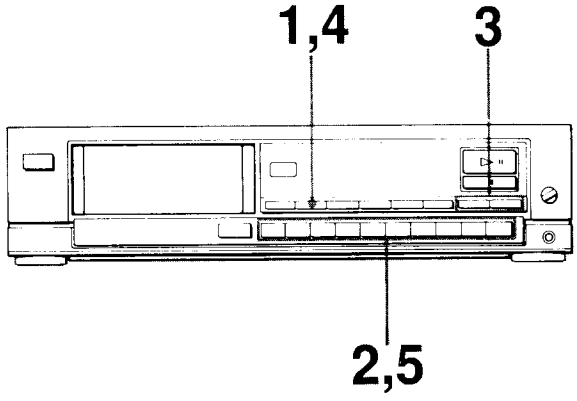
During 1 DISC play
Only the number of the disc being played is circled in the display window.

If FADER is pressed close to the end of the disc
If FADER is pressed when the total remaining time of the current disc is less than 5 seconds, play does not enter the pause mode, but continues for the next disc. If it is the case for the 10th disc, play stops at the end of the disc.

Playing in the Desired Order—Program Play

Up to 32 selections (a whole disc can count as one selection), chosen from any of the 10 discs in the disc magazine, can be used to create a program.

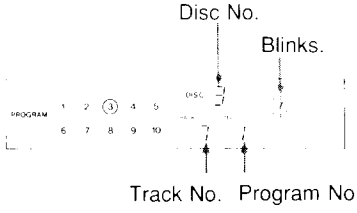
Programming Selections



1 **Press PROGRAM.**

2 **Press the DISC selector** which corresponds to the disc you want.

3 **Press** ⏮ ⏭ so that the track number corresponding to the selection you want blinks in the music calendar.



4 **Press PROGRAM.**
The track number lights up steadily.

5 To add additional selections from the same disc, **repeat steps 3 and 4.**
To add additional selections from other discs, **repeat steps 2, 3 and 4.**
To program an entire disc under one 'program number', see the note below.

To play the programmed selections
Press ▶ II (or ▶ on the remote commander).

To return to normal play
Press CONTINUE.

To program an entire disc under one 'program number'
Press the DISC selector which corresponds to the disc you want to add to your program. "AL" will appear in the display window. To add additional selections, follow the above steps.

When each selection ends during program play
The number of that selection will disappear from the display, but the program itself will remain. If you press ▶ II , you can play the same program again.

The following operations are possible during program play

To skip to the next selection	Press ⏭ .
To go back to the beginning of the selection being played	Press ⏮ .
To skip to the previous selection	Press ⏮ .

When a whole disc has been programmed under a single program number, you can skip from the last selection on that disc to the next by pressing ⏭, and from the first selection on that disc to the previous one by ⏮.

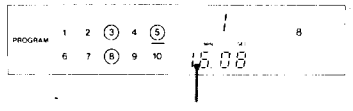
Programming Selections Using Remote Commander

1 Press PROGRAM.
2 Press the DISC selector which corresponds to the disc you want.
3 Press the TRACK selector which corresponds to the selection you want.
The selected number lights up in the music calendar.
4 To add additional selections from the same disc, repeat step 3.
To add additional selections from other discs, repeat steps 2 and 3.
To program an entire disc under one 'program number', see the note in the previous page.

To play the programmed selections, press ► .

Programming while Checking the Total Playing Time of the Programmed Selections

When a selection (or an entire disc) is added to the program (after step 4 in the previous page, or after step 3 above), press TIME. While the total playing time is checked, the time display blinks. The total playing time of the selections currently included in the program will then be displayed.



The total playing time is
1 hour 16 minutes 8 seconds.

The total time will disappear after approx. 4 seconds. You can then continue programming, or you can also continue programming even while the total time is still displayed. When 21st or succeeding track on a disc is programmed, however, the total time will not be calculated any longer, and "- - - - -" will be displayed.

Checking the Programmed Selections

Press CHECK.

The disc, track, and program numbers of the first selection in your program will be displayed.
Each time you press CHECK, the program will move forward by one selection. When the last selection is reached, "End" (end) will appear in the display window.

When your program has the 21st selection and after

The numbers for selections over 20 cannot be displayed in the music calendar, but the track and program number will be shown in the display window.

To return to the normal display

Press CHECK one more time after "End" appears in the display window.

Clearing the Programmed Selections

This operation is possible only with the remote commander.

Clearing the whole program

Press ■ once during stop, or twice during play.
All the selections will be cleared.

Clearing the last selections in the program

Press CLEAR during stop.
The last selection is cleared each time CLEAR is pressed.

Clearing a specific selection

1 Press CHECK repeatedly until the number of the selection you want to clear appears in the display.
2 Press CLEAR while the number is displayed.
The selection will be cleared from the program. You cannot clear a selection which is being played.

To add selections to a program during play
Use the remote commander.
Follow the same procedures as "Programming Selections" using Remote Commander, step 4".

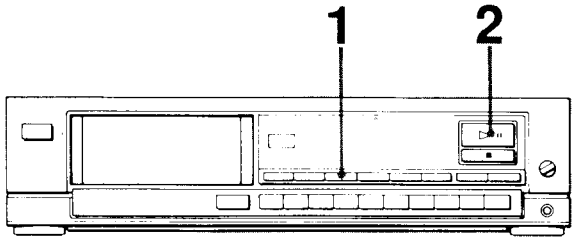
Note
If you press PROGRAM during the continuous play (ALL DISCS or 1 DISC) or shuffle play (page 16), the selection currently being played will be programmed as the first selection in the program.

Program will be cleared from memory in the following cases
• ■ is pressed twice during program play.
• CONTINUE, SHUFFLE or ⏏ is pressed.

Spacing between selections in a program
When consecutive selections from one disc are programmed in sequence, the original interval between selections will be retained. When the program must change from one disc to another, there will be a pause of a few seconds.

Playing in Random Order—Shuffle Play

Shuffling the Selections on All the Discs - All DISCS Shuffle Play
(up to 32 selections on each disc)

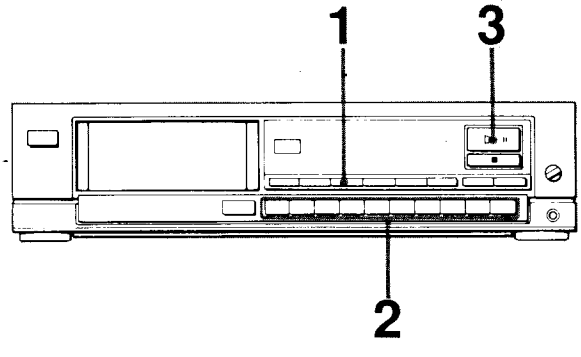


1 **Press SHUFFLE** until "SHUFFLE" and "ALL DISCS" appear in the display window.

2 **Press ► II (or ► on the remote commander).**
All the discs and selections on them will be played in random order.

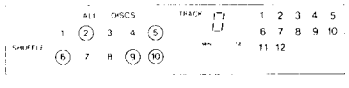
To cancel shuffle play mode
Press CONTINUE.

Shuffling the Selections on the Desired Discs - Select DISC Shuffle Play
(up to 32 selections on each disc)



1 **Press SHUFFLE** until "SHUFFLE" and "ALL DISCS" appear in the display window.

2 **Press DISC selectors** that correspond to the discs you want to play.
The selected disc numbers are circled in the display window.



3 **Press ► II (or ► on the remote commander).**
The selections on the selected discs will be played in random order.

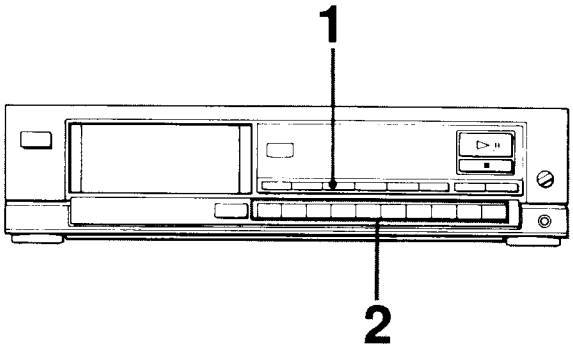
To cancel shuffle play mode
Press CONTINUE.

If you press SHUFFLE during normal or program play
Shuffle play begins from the selection being played.

If there is a disc containing more than 32 selections
During ALL DISCS or select DISC shuffle play, the 33th and succeeding selections on a disc are not played.

During ALL DISCS shuffle play and select DISC shuffle play
The following buttons do not operate:
- The DISC selectors on the main unit and the remote commander
- The TRACK selectors on the remote commander
- The >20 button on the remote commander

Shuffling Selections on Only One Disc - 1 DISC Shuffle Play
(up to 99 selections on the selected disc)



1 **Press SHUFFLE** until "SHUFFLE" and "1 DISC" appear in the display window.

2 **Press the DISC selector** which corresponds to the disc you want.
All the selections on the disc will be played once in random order.

To cancel shuffle play mode
Press CONTINUE.

Notes on the shuffle play
- When all the selections are played once, the shuffle play stops. The repeat play function allows to repeat the shuffle play endlessly. (See next page.)
- When a selection is played during the shuffle play, this selection will not be played back again until the shuffle play stops.

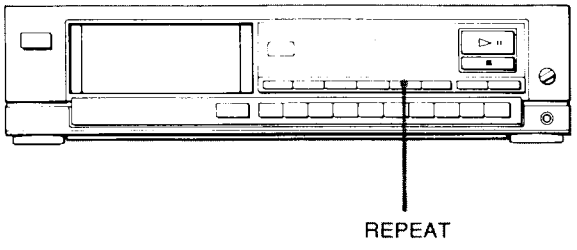
What is this indication?

This indication appears while the player is "shuffling" the selections.
In the ALL DISCS and select DISC shuffle play, the red circles also light up one after another successively while "shuffling."

To skip the selection
To skip to the next selection, press the ▶▶| button.
To return to the beginning of the selection being played, press the |◀◀ button.
During shuffle play, you cannot return to the previous selections.

During 1 DISC shuffle play
The TRACK selectors and the >20 button on the remote commander do not operate. To change a disc, press the DISC selector which corresponds to the disc you want. Shuffle of that disc will begin automatically.

Playing Repeatedly—Repeat Play



You can repeat a single disc, all the discs, the programmed selections, 1 DISC, select DISC, or ALL DISCS shuffle play.

Press REPEAT during play or pause.
Repeat play will begin according to the current play mode.

Play mode	Selections to be repeated
Continue	All the selections (1 DISC or ALL DISCS)
Program	Programmed selections in the programmed order
1 DISC shuffle	All the selections, reshuffled each time (up to 99 selections)
Select DISC shuffle/ ALL DISC shuffle	All the selections, reshuffled each time (up to 32 selections for each disc)

When the select DISC shuffle mode is repeated, the selected discs remain unchanged each time shuffling takes place.

To cancel repeat play mode
Press REPEAT again.

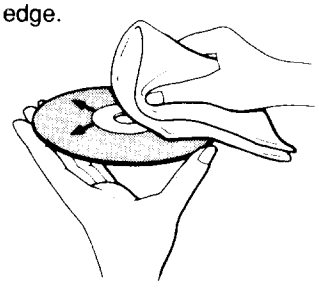
Maintenance

Cleaning the cabinet

Clean the cabinet, panel and controls with a soft cloth lightly moistened with a mild detergent solution. Do not use any type of abrasive pad, scouring powder or solvent such as alcohol or benzine.

Cleaning discs

Before inserting the discs into the disc magazine, clean the discs with the cleaning cloth. Wipe the disc from the center out and along the edge.



Do not use solvents such as benzine, thinner, commercially available cleaners or anti-static spray intended for analog discs.

Discs should be cleaned once every 6 months.

Specifications

System	Compact disc digital audio system
Disc	Compact disc
Laser	Semiconductor laser (λ = 780 nm)
Emission duration	Continuous
Laser output	Less than 44.6 μW * This output is the value measured through the aperture of 7 mm diameter at a distance of 200 mm from the objective lens surface on the Optical Pickup Block.
Frequency response	2 - 20,000 Hz $\pm$ 0.3 dB
Signal to noise ratio	More than 105 dB
Dynamic range	More than 95 dB
Harmonic distortion	Less than 0.004%
Channel separation	More than 98 dB (1 kHz)
Wow and flutter	Below measurable limit

Output jacks

LINEOUT (phono jacks)	Output level 2 V (at 50 kilohms) Load impedance over 10 kilohms
DIGITAL OUT (OPTICAL) (optical output connector)	Wave length 660 nm Output level –18 dBm
HEADPHONES (stereo phone jack)	Output level max. 15 mW Load impedance 32 ohms

Power requirements	120 V AC, 60 Hz
Power consumption	11 W
Dimensions	Approx. 430 x 115 x 370 mm (w/h/d) (17 x $4^5/_8$ x $14^5/_8$ inches) including projecting parts and controls
Weight	Approx. 6.5 kg (14 lb 6 oz.), net

Supplied accessories

Remote commander (1)
Disc magazine (1)
Audio signal connecting cord
(phono plug x 2 ↔ phono plug x 2) (1)
Sony SUM-3 (NS) batteries (2)

Remote commander RM-D905

Remote control system	Infrared control
Power requirements	3 V DC with two size AA (R6) batteries
Dimensions	Approx. 67 x 20 x 175 mm (w/h/d) ($2^3/_4$ x $^{13}/_{16}$ x 7 inches)
Weight	Approx. 130g (5 oz.) incl. batteries

Design and specifications subject to change without notice.

Troubleshooting Guide

The following checks will help you correct most problems which you may encounter with your unit.
Before going through the check list below, refer to the connections and operating procedures.

Should any problem persist after you have made these checks, consult your nearest Sony service facility.

Symptom	Cause	Remedy
Play does not start.	Dirty disc	Clean the disc.
	The disc is inserted with the label surface downward.	Insert the disc with the label surface up.
	The unit is in the pause mode.	Press the ▶ II button again to release pause.
	Moisture condensation	Wait for approx. one hour after turning on the unit then start play.
No sound	Loose connection	Connect the cords firmly.
Display window does not illuminate even when the power is turned on.	The AC power cord is disconnected.	Connect the AC power cord firmly.
Remote commander does not operate the unit.	The batteries are exhausted.	Replace both batteries.
	The remote commander is not pointed at the remote control sensor.	Point the remote commander to the sensor.
	There is an obstacle between the remote commander and the unit.	Remove the obstacle.
	The remote commander is too far from the unit.	Move closer.
The disc magazine cannot be removed even if the ⏏ button is pressed.	The power of the unit is not turned on.	Depress the POWER switch (⎓ ON).
	The ⏏ button is not pressed firmly.	Press the button again.
Any operation is not possible.	The internal control program may not run.	Turn off the power and turn it on again.

Sony Corporation Printed in Japan